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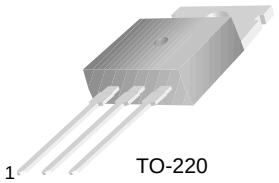
FAIRCHILD SEMICONDUCTOR®

Jameco Part Number 179282

TIP115/116/117

Monolithic Construction With Built In Base-Emitter Shunt Resistors

- High DC Current Gain : h_{FE}=1000 @ V_{CE}= -4V, I_C= -1A (Min.)
- Low Collector-Emitter Saturation Voltage
- Industrial Use
- Complementary to TIP110/111/112



TO-220

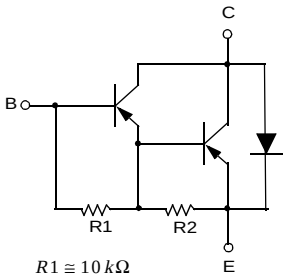
1.Base 2.Collector 3.Emitter

PNP Epitaxial Silicon Darlington Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter		Value	Units
V_{CBO}	Collector-Base Voltage	: TIP115	- 60	V
		: TIP116	- 80	V
		: TIP117	- 100	V
V_{CEO}	Collector-Emitter Voltage	: TIP115	- 60	V
		: TIP116	- 80	V
		: TIP117	- 100	V
V_{EBO}	Emitter-Base Voltage		- 5	V
I_C	Collector Current (DC)		- 2	A
I_{CP}	Collector Current (Pulse)		-4	A
I_B	Base Current (DC)		- 50	mA
P_C	Collector Dissipation (T_a=25°C)		2	W
	Collector Dissipation (T_C=25°C)		50	W
T_J	Junction Temperature		150	°C
T_{STG}	Storage Temperature		- 65 ~ 150	°C

Equivalent Circuit



$R1 \cong 10\,k\Omega$
$R2 \cong 0.6\,k\Omega$

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
V_{CEO}(sus)	Collector-Emitter Sustaining Voltage				
	: TIP115	I_C = -30mA, I_B = 0	-60		V
	: TIP116		-80		V
	: TIP117		-100		V
I_{CEO}	Collector Cut-off Current				
	: TIP115	V_{CE} = -30V, I_B = 0		-2	mA
	: TIP116	V_{CE} = -40V, I_B = 0		-2	mA
	: TIP117	V_{CE} = -50V, I_B = 0		-2	mA
I_{CBO}	Collector Cut-off Current				
	: TIP115	V_{CB} = -60V, I_E = 0		-1	mA
	: TIP116	V_{CB} = -80V, I_E = 0		-1	mA
	: TIP117	V_{CB} = -100V, I_E = 0		-1	mA
I_{EBO}	Emitter Cut-off Current	V_{BE} = -5V, I_C = 0		-2	mA
h_{FE}	DC Current Gain	V_{CE} = -4V,I_C = -1A	1000		
		V_{CE} = -4V, I_C = -2A	500		
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = -2A, I_B = -8mA		-2.5	V
V_{BE}(on)	Base-Emitter ON Voltage	V_{CE} = -4V, I_C = -2A		-2.8	V
C_{ob}	Output Capacitance	V_{CB} = -10V, I_E = 0, f = 0.1MHz		200	pF

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Typical Characteristics

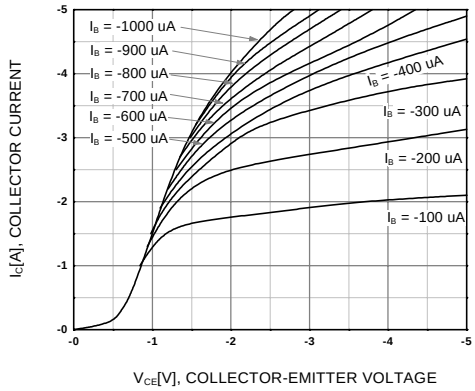

Figure 1. Static Characteristic

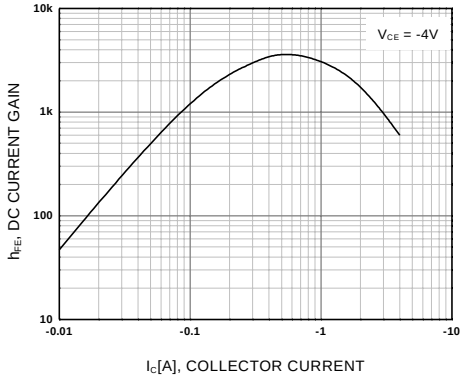

Figure 2. DC current Gain

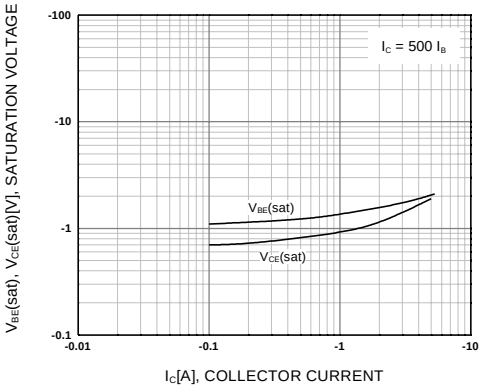

Figure 3. Collector-Emitter Saturation Voltage Base-Emitter Saturation Voltage

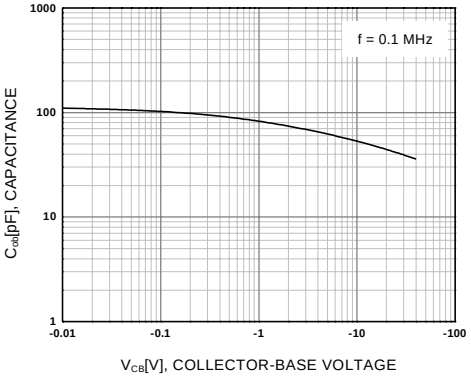

Figure 4. Collector Output Capacitance

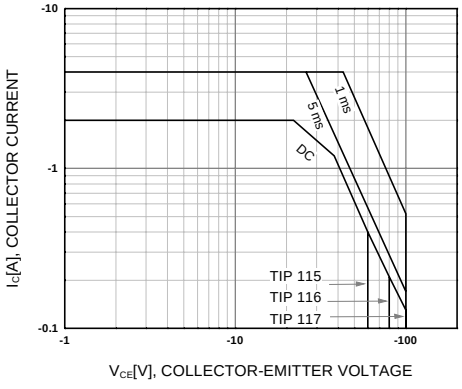

Figure 5. Safe Operating Area

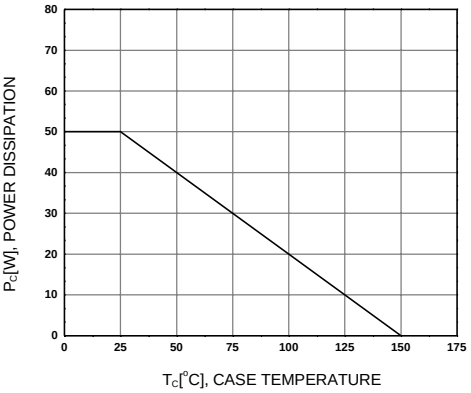

Figure 6. Power Derating

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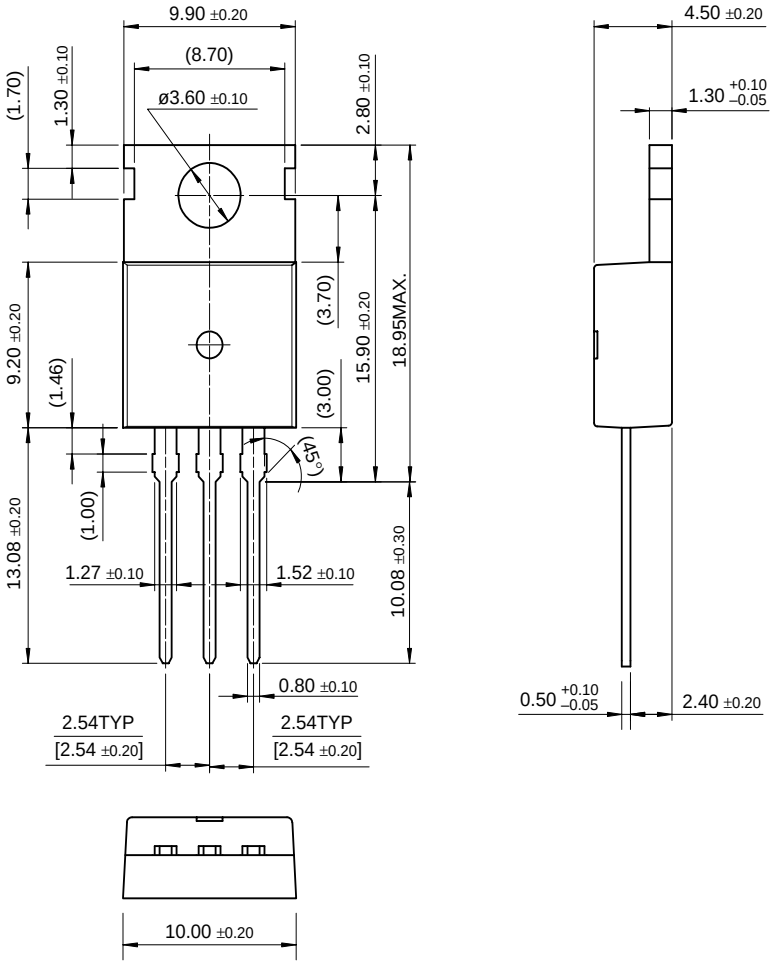
Package Demensions

TO-220



Dimensions in Millimeters

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